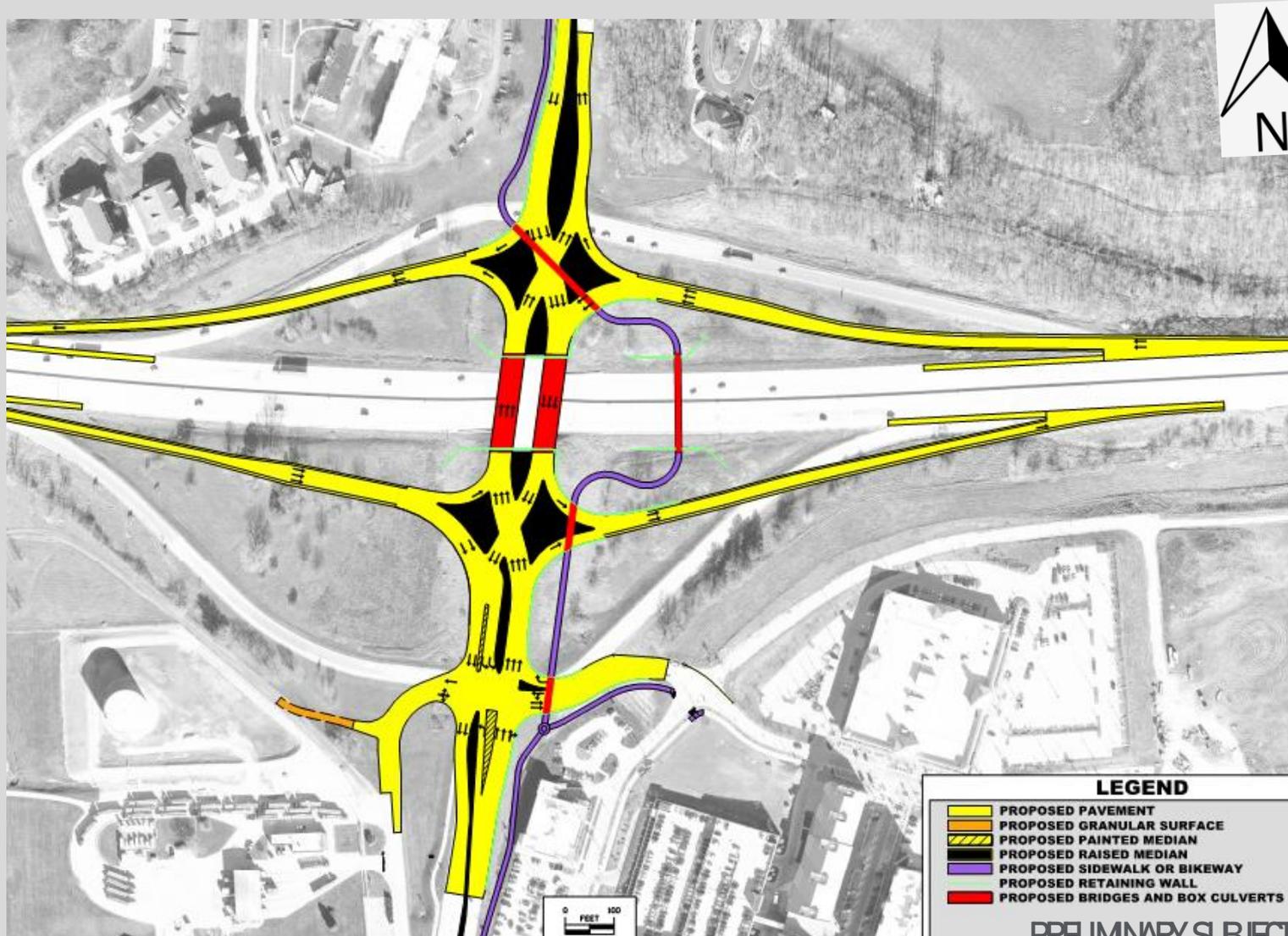




I-80 at 1st Ave DDI in Coralville Construction Staging Review

General Project Overview



PRELIMINARY SUBJECT TO CHANGE

Utility Coordination

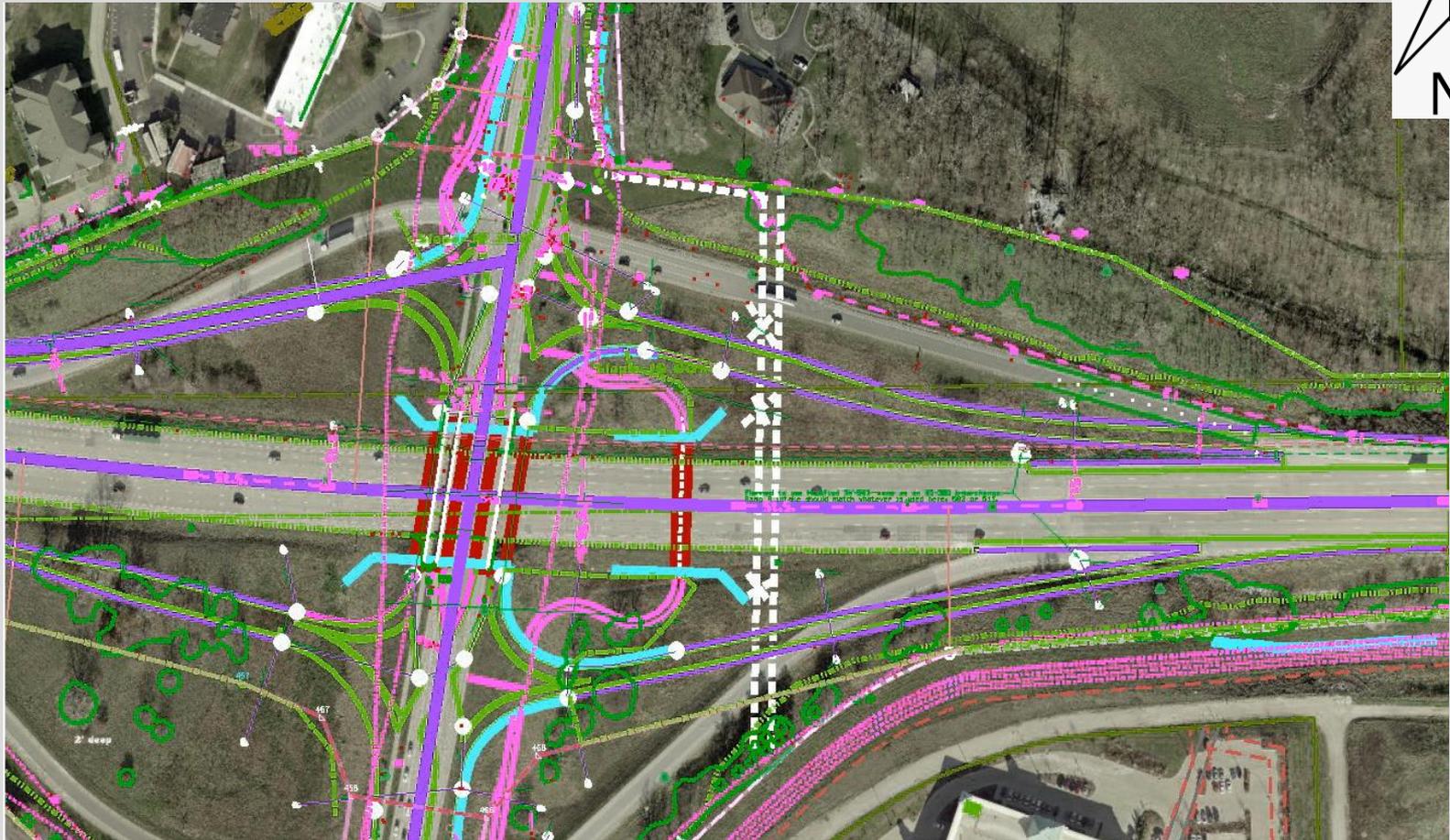
Goal: have all public utility relocations completed by project letting date on August 16th, 2022

Utility Coordination



Public utilities will relocate into the City of Coralville new public utility easement located outside of 1st Avenue project limits.

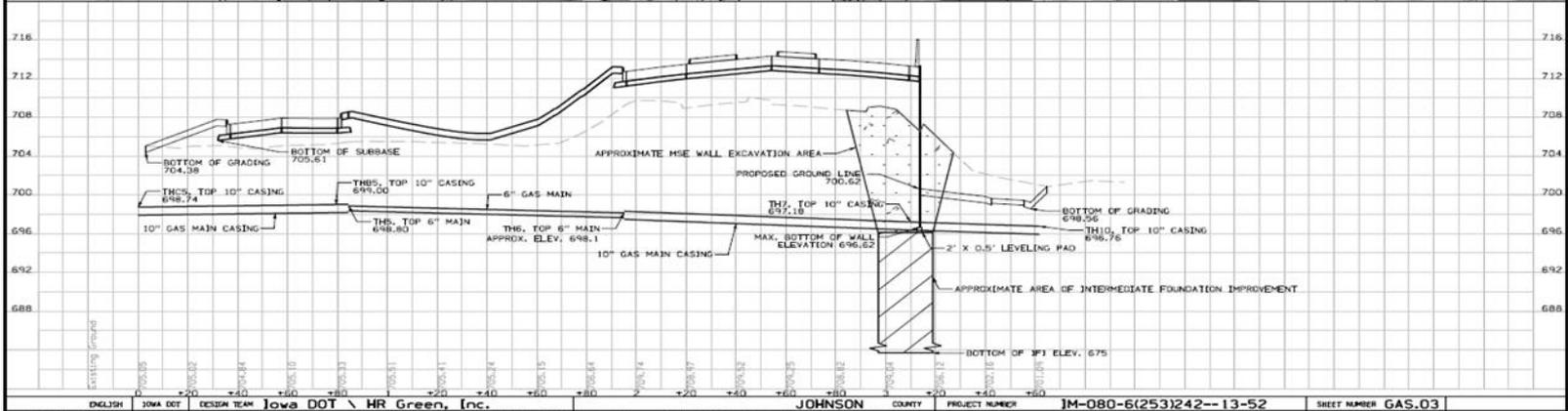
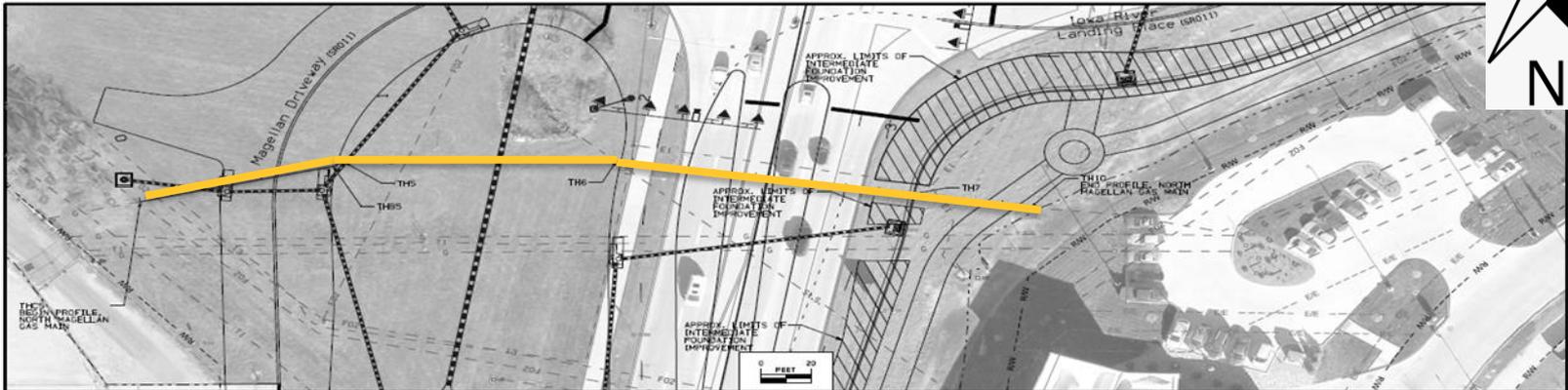
Utility Coordination



Designated I-80 Public Utility Crossing Location

I-80 at 1st Ave DDI in Coralville

Utility Coordination



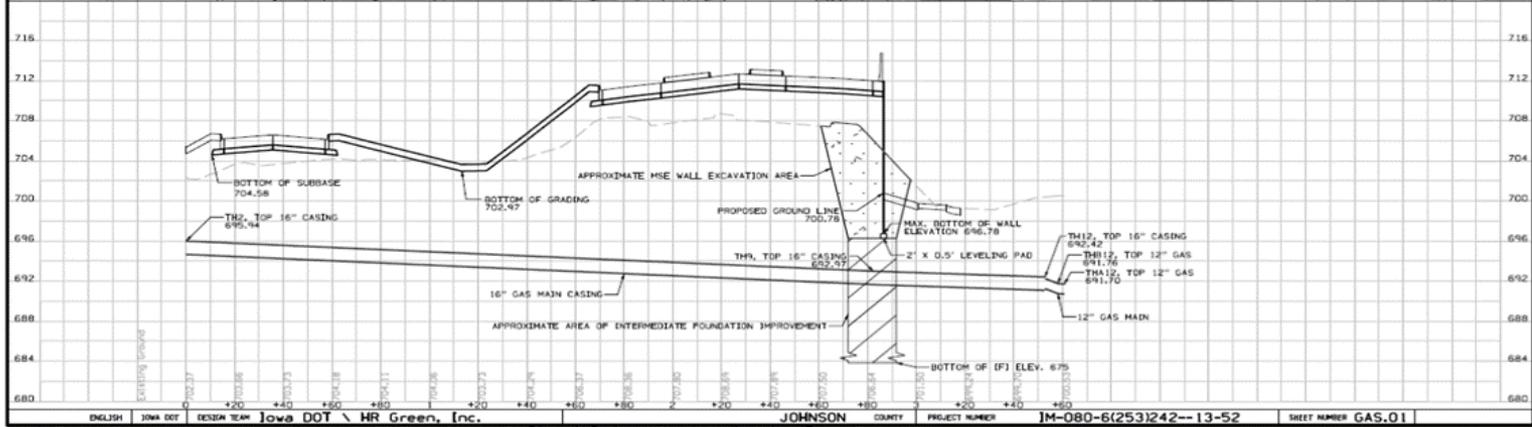
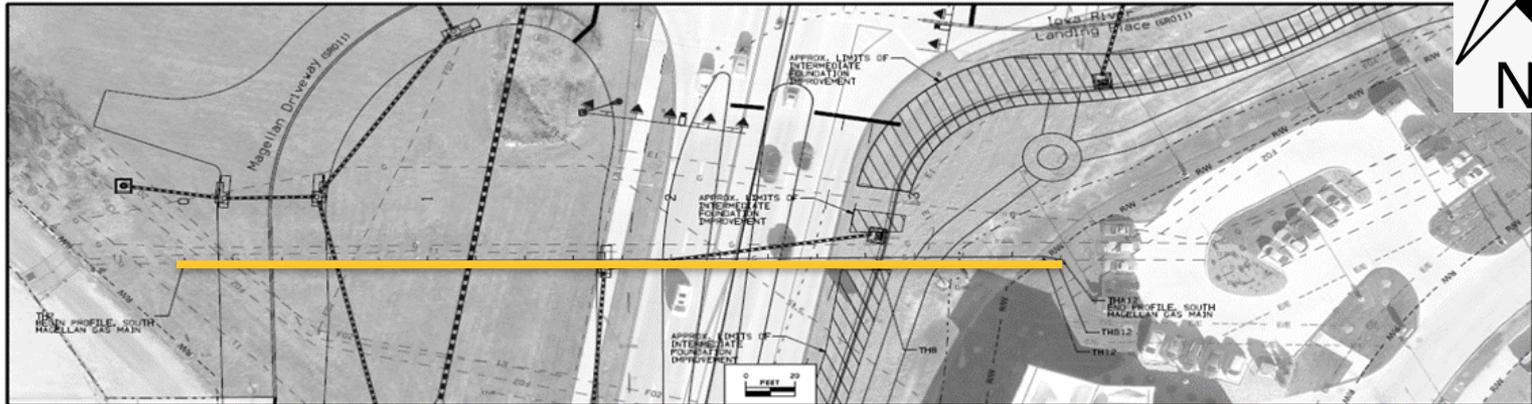
ENGLISH IOWA DOT DESIGN TEAM Jowa DOT \ HR Green, Inc. JOHNSON COUNTY PROJECT NUMBER JM-080-6(253)242-- 13-52 SHEET NUMBER GAS.03

Magellan petroleum pipeline to remain in place (6" line within 10" casing)

PRELIMINARY SUBJECT TO CHANGE

I-80 at 1st Ave DDI in Coralville

Utility Coordination



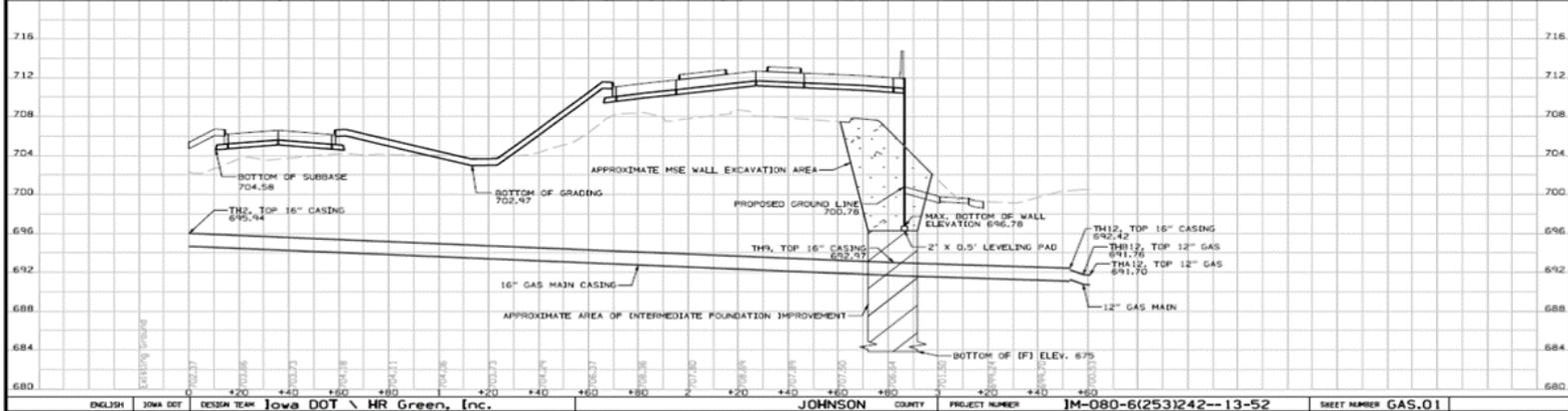
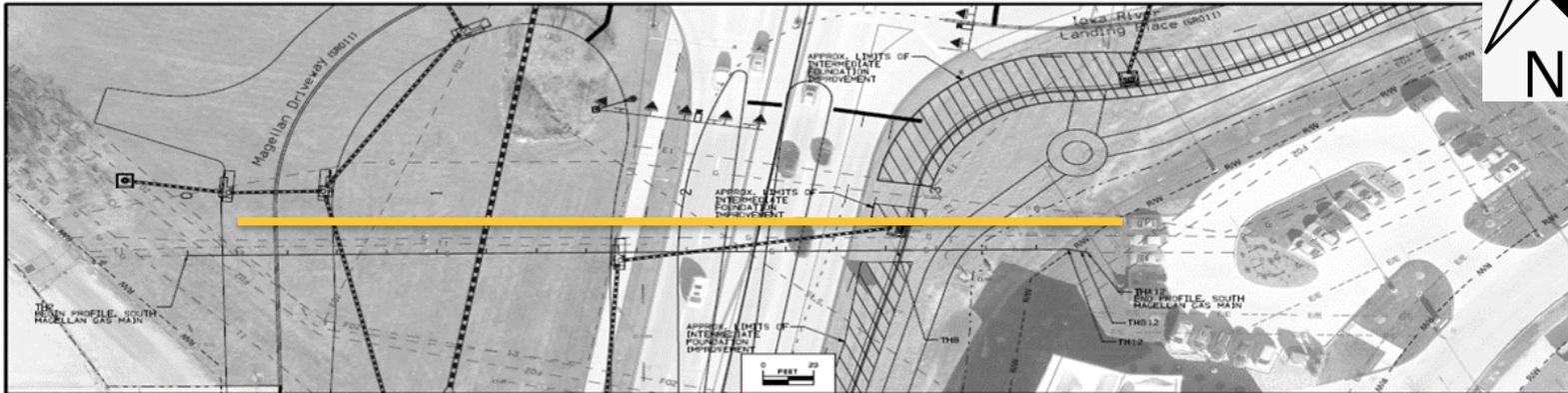
ENGLISH IOWA DOT DESIGN TEAM Iowa DOT \ HR Green, Inc. JOHNSON COUNTY PROJECT NUMBER JM-080-6(253)242--13-52 SHEET NUMBER GAS.01

Magellan petroleum pipeline to remain in place (12" line within 16" casing)

PRELIMINARY SUBJECT TO CHANGE

I-80 at 1st Ave DDI in Coralville

Utility Coordination



ENGLISH IOWA DOT DESIGN TEAM Iowa DOT \ HR Green, Inc. JOHNSON COUNTY PROJECT NUMBER IM-080-6(253)242--13-52 SHEET NUMBER GAS.01

6" abandoned pipeline located between the 8" and 12" Magellan lines has a Verizon fiber line located inside.

PRELIMINARY SUBJECT TO CHANGE

Utility Coordination

Magellan Requirements

- Magellan will require inspector to be on site at all times when construction is taking place within 25' of any of the three pipelines. Cost associated with this will be paid through the IADOT utility relocation agreement.
- Magellan will need to provide approval for the heaviest piece of equipment that will be driving over the pipelines.
- Iowa One Call requirements of hand digging within 2 ft of the pipelines.

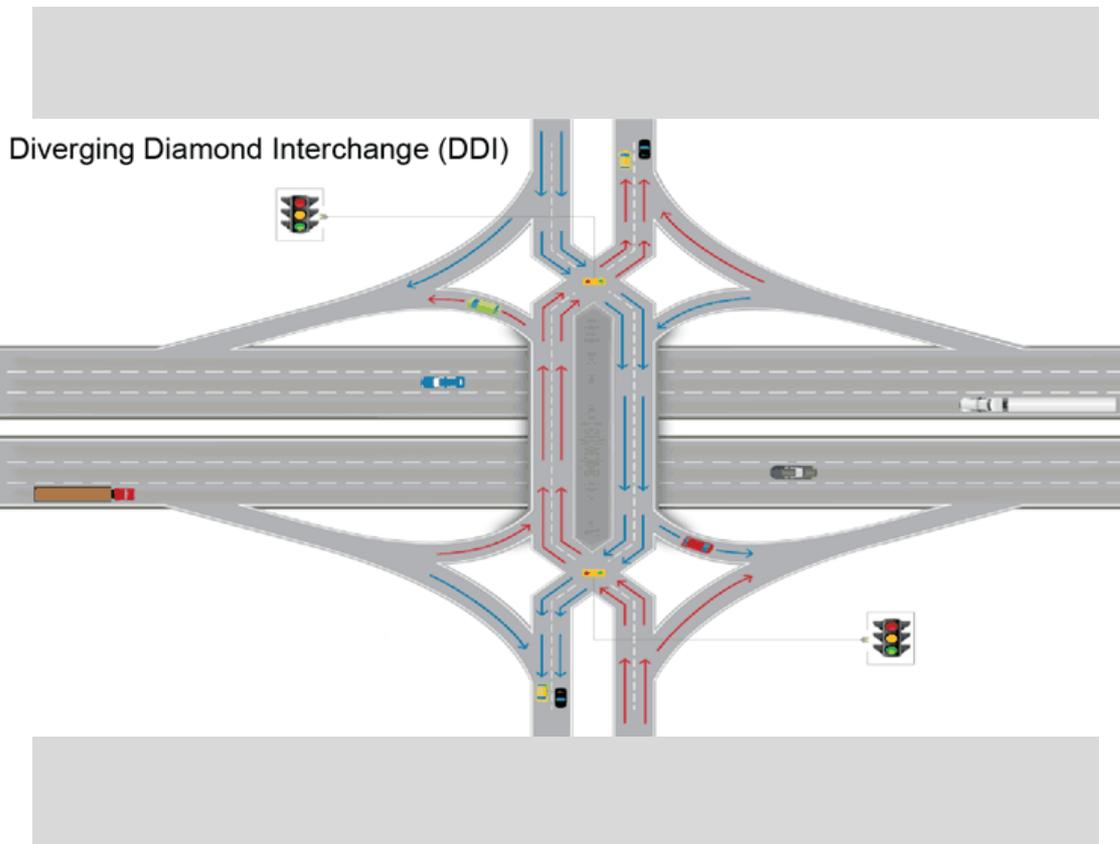


Image credit: Wisconsin DOT

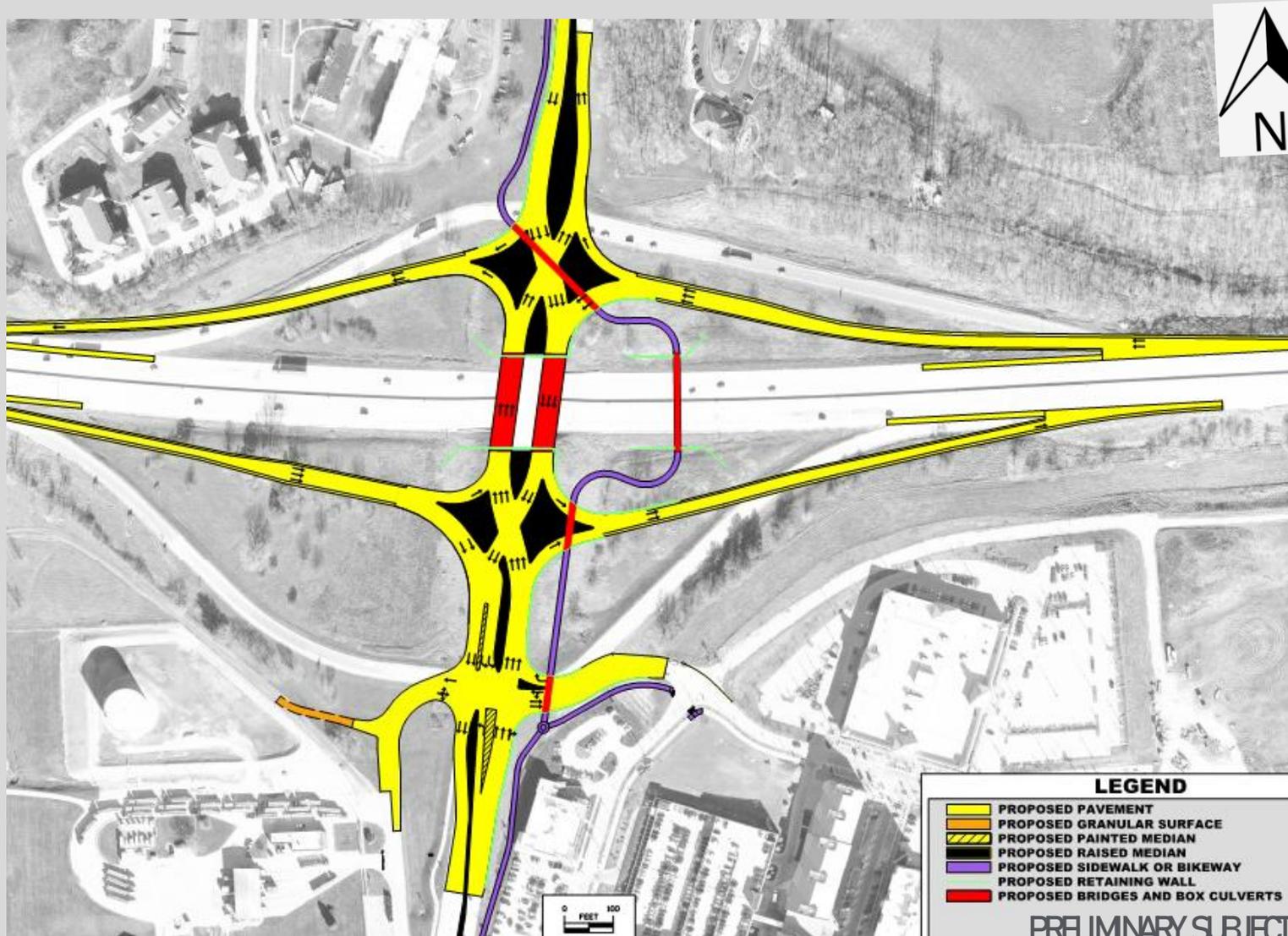
What is a DDI?

- Diverging Diamond Interchange
- Minor road traffic crosses to the left side of the road at a signalized intersection
- First one in US opened in 2009
- Now over 100 in use and dozens more in planning or construction

Why use a DDI?

- Decreases vehicle conflict points by nearly half, and removes left turns across oncoming traffic
- Increases capacity and efficiency
- With extra signage, barriers, and pavement markings, drivers will adjust quickly

General Project Overview

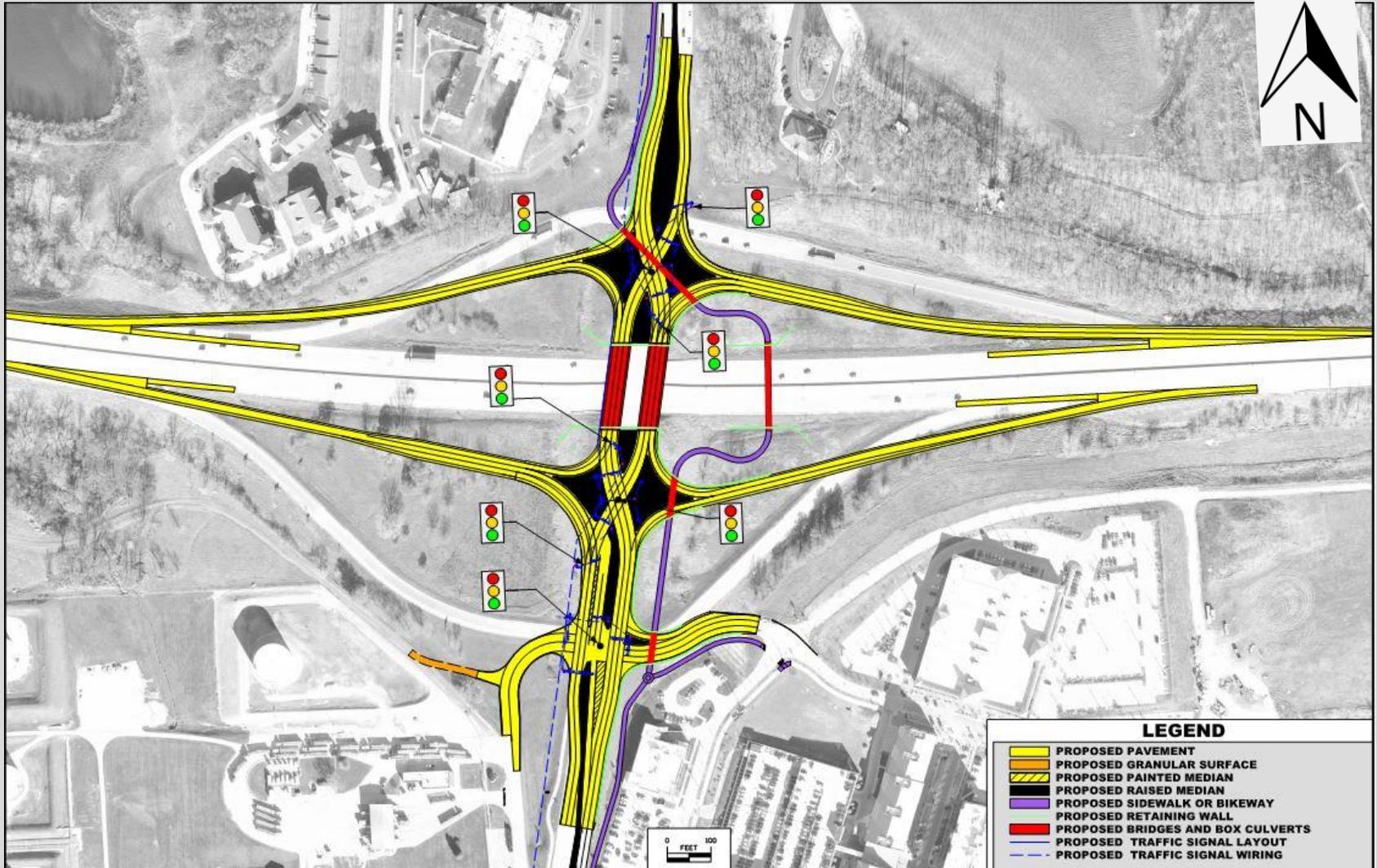


I-80 at 1st Ave DDI in Coralville

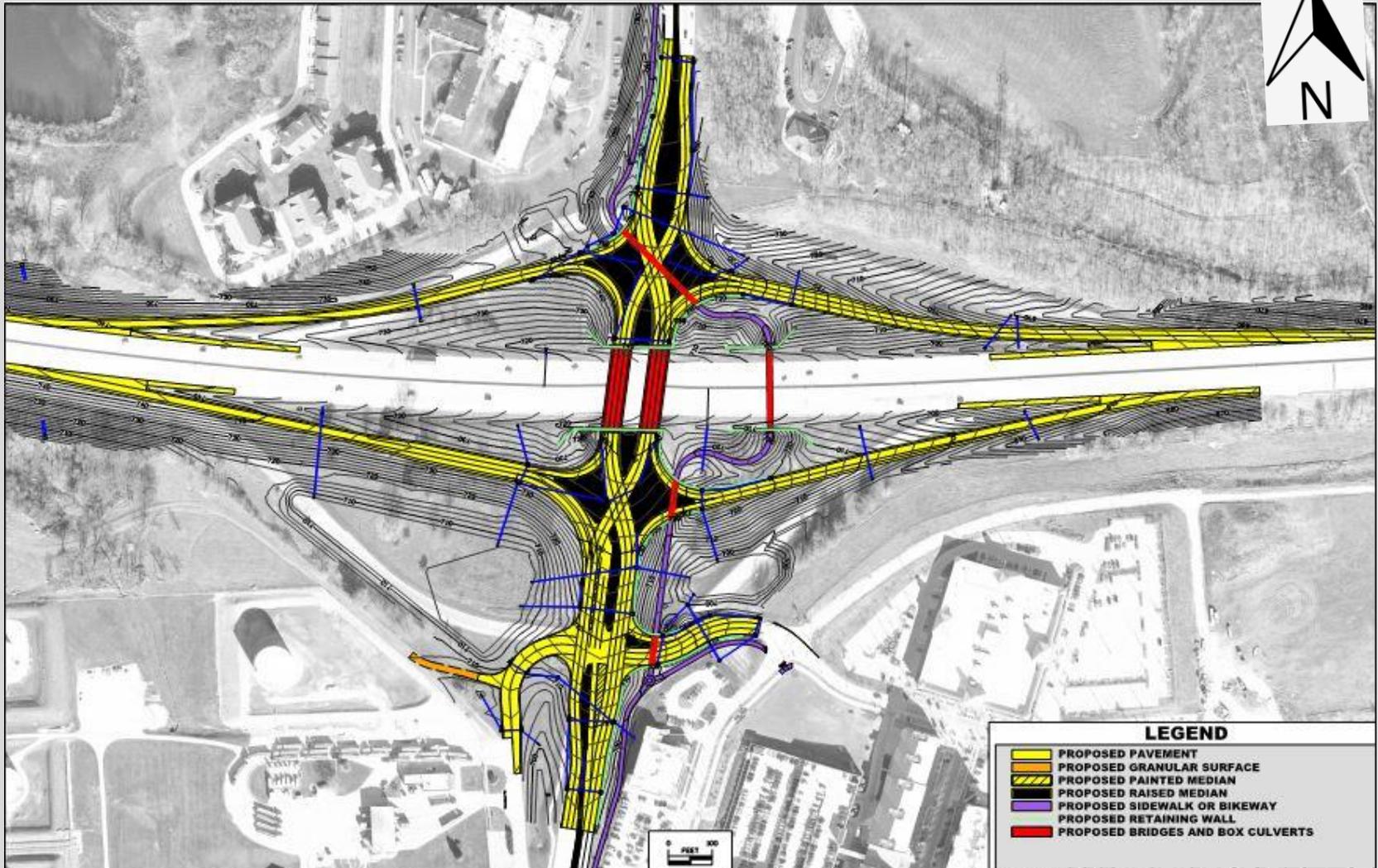
Aerial View Looking Southwest



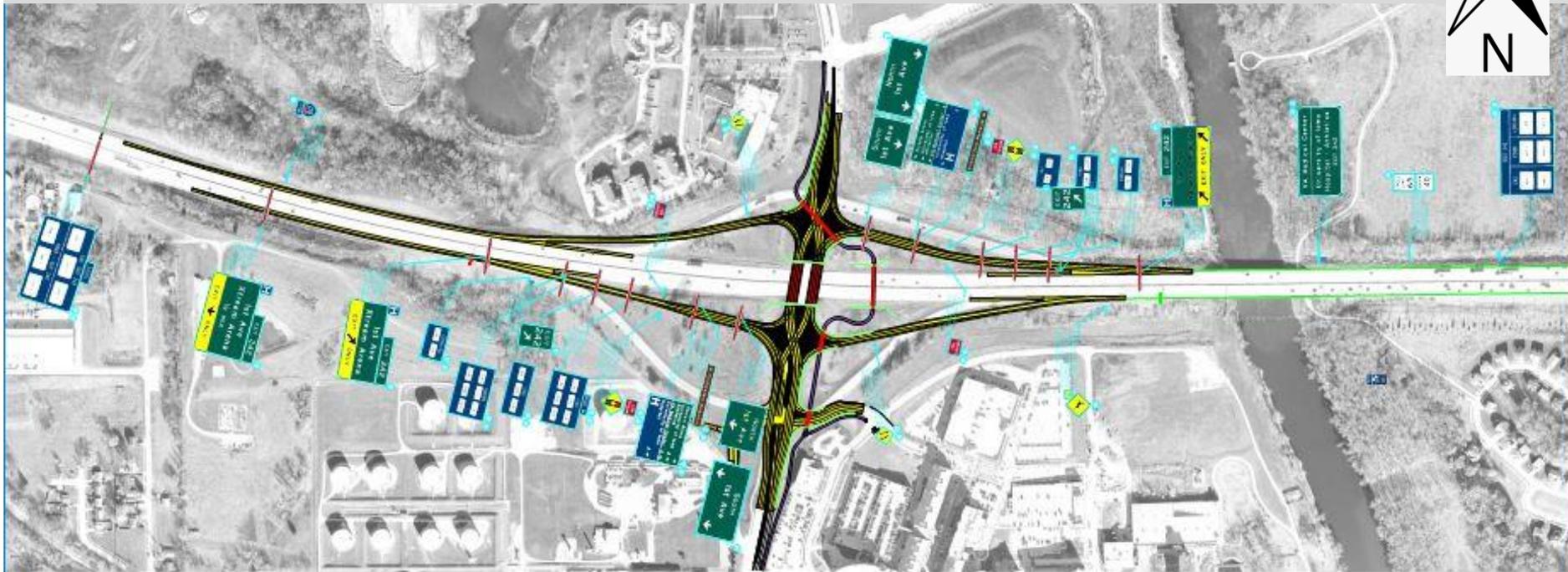
Project Overview – Signals



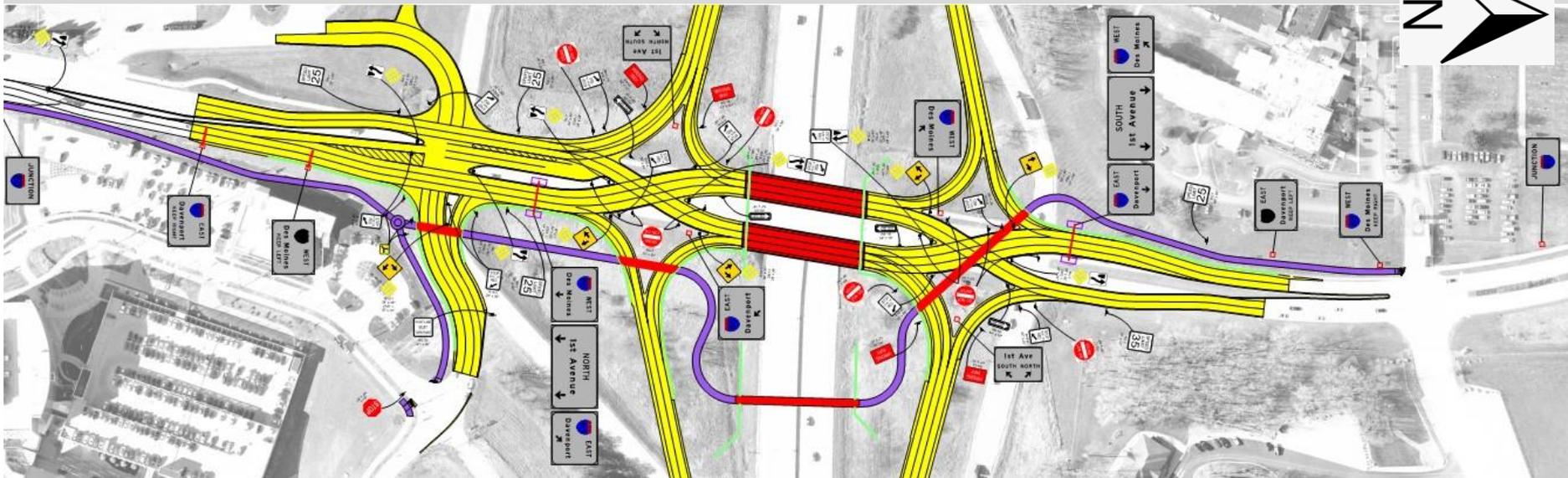
Project Overview – Drainage



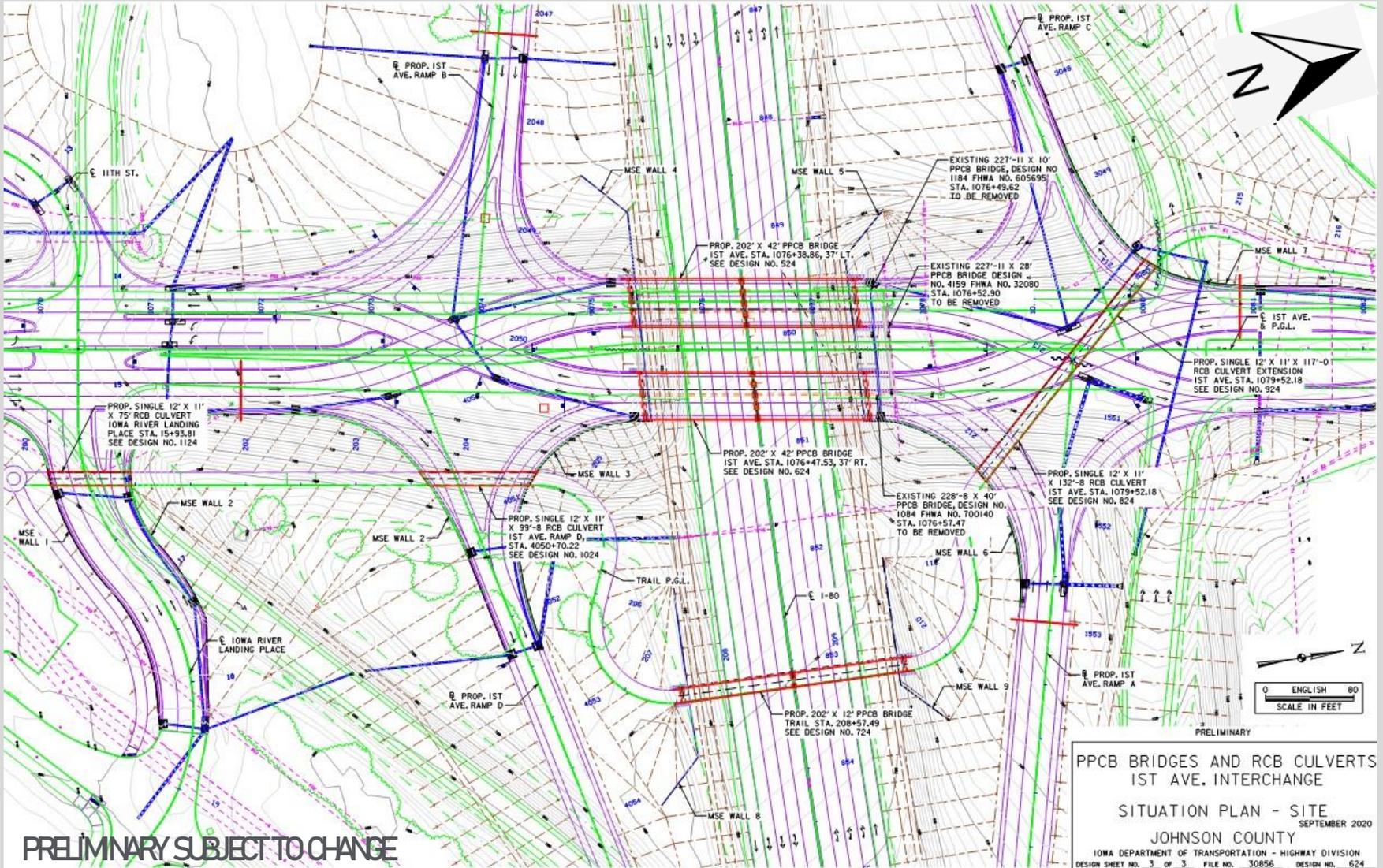
Project Overview – Signs along I-80 and Ramps



Project Overview – Signs along Side Roads

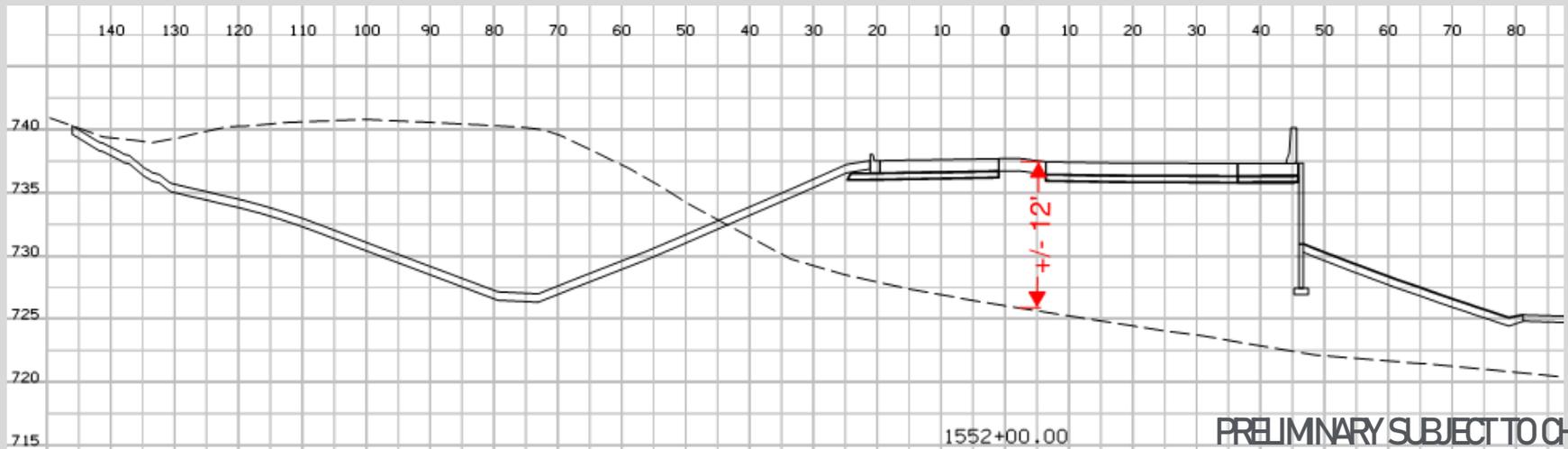
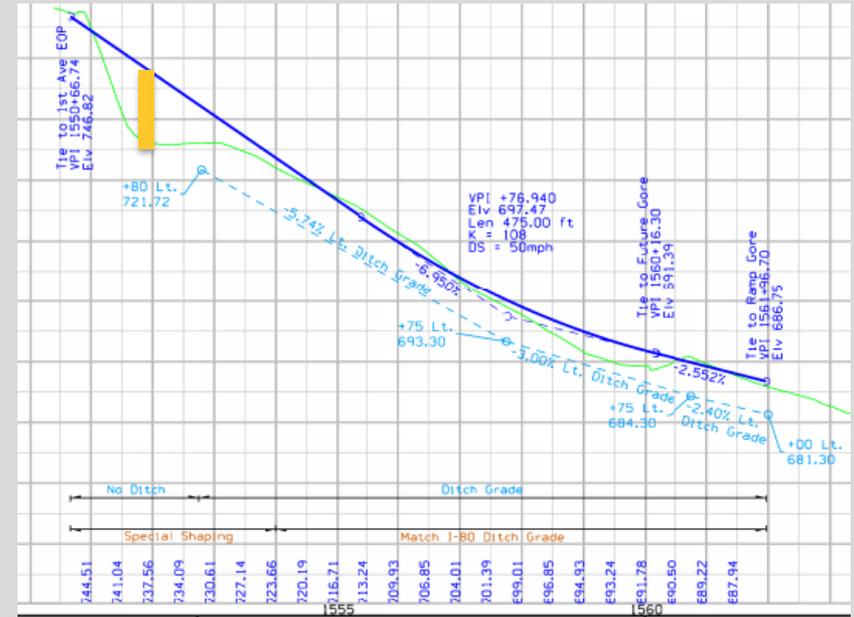


Project Overview – Structures



I-80 at 1st Ave DDI in Coralville

Area of Greatest Fill, Ramp A (NE)

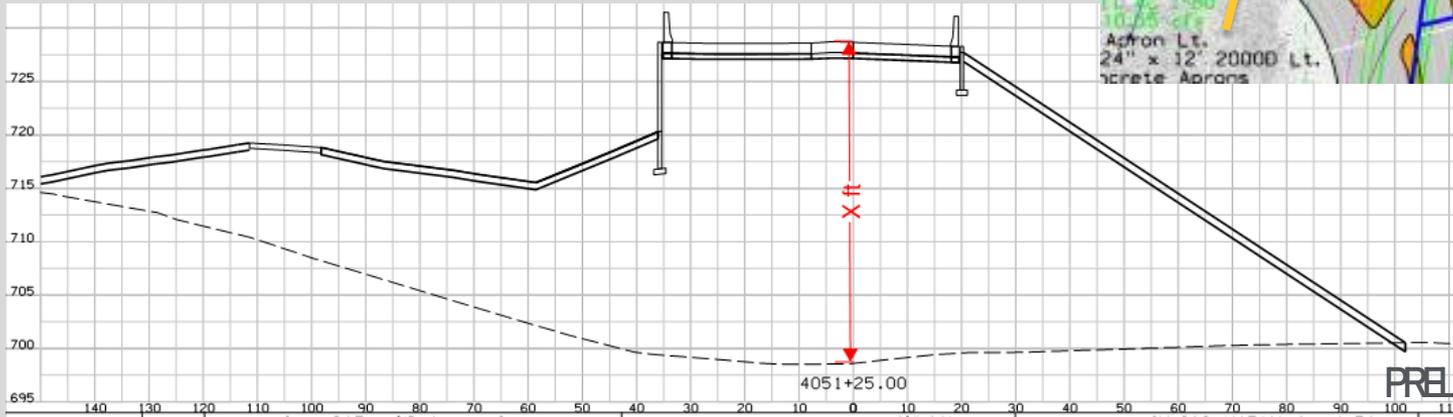
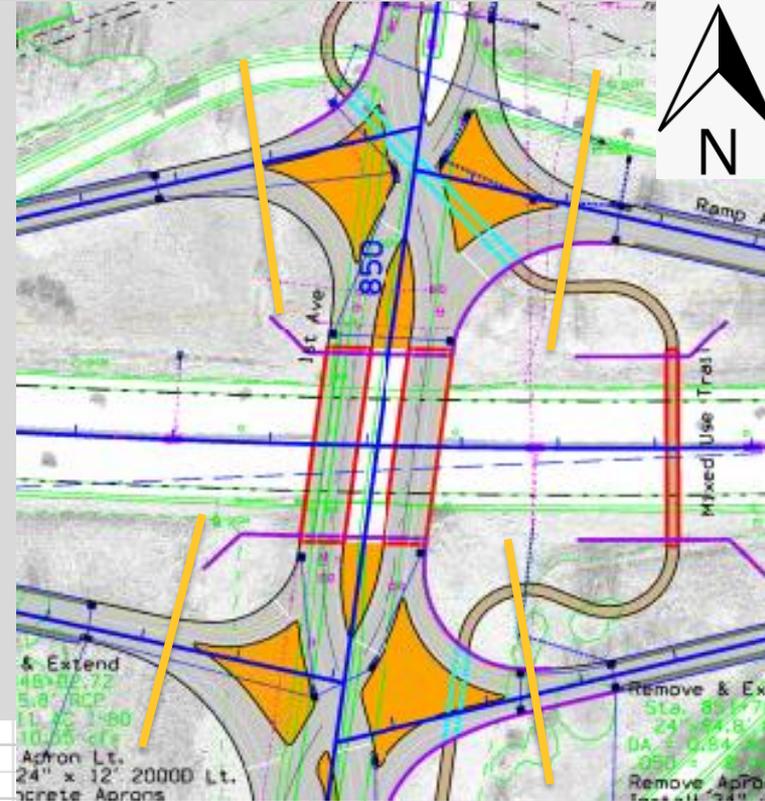


PRELIMINARY SUBJECT TO CHANGE

Areas of Greatest Fill, Ramps

Greatest Fill (X) at Ramp Baseline

A	12'
B	19'
C	12'
D (shown)	30'



PRELIMINARY SUBJECT TO CHANGE

Staging Overview

2023 Construction Season

- Two-way traffic maintained in the two existing west lanes of 1st Avenue
- Removal of existing east bridge and construction of two new east bridges
- Construction concentrated on east side of interchange

2025 Spring

- The only remaining work consists of landscaping, erosion control, and other tasks that have little impact on traffic in the interchange.

2024 Construction Season

- Two-way traffic maintained on the newly constructed east side of 1st Avenue
- Removal of existing two west bridges and construction of one new west bridge
- Construction concentrated on west side of interchange

2022 Fall

- August 16th letting
- Temporary pavement, grading, MSE wall, and other construction is required before winter in order to allow bridge construction to continue through winter months.

I-80 at 1st Ave DDI in Coralville

Staging Plan Breakdown

Letting Date: 8/16/2022
 Construction Start: 9/1/2022

TASK	START	END	2022												2023												2024											
			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
PHASE 1			[Green bar]																																			
Stage 1	9/1/2022	9/30/2022	[Green bar]																																			
PHASE 2			[Green bar]																																			
Stage 1	10/1/2022	6/30/2023	[Green bar]																																			
Stage 2	7/1/2023	7/31/2023	[Green bar]																																			
Stage 3	8/1/2023	8/31/2023	[Green bar]																																			
Stage 4	9/1/2023	9/30/2023	[Green bar]																																			
PHASE 3			[Green bar]																																			
Stage 1	10/1/2023	10/31/2023	[Green bar]																																			
Stage 2	11/1/2023	6/30/2024	[Green bar]																																			
Stage 3	7/1/2024	8/31/2024	[Green bar]																																			
PHASE 4			[Green bar]																																			
Stage 1	9/1/2024	9/30/2024	[Green bar]																																			
Stage 2	10/1/2024	11/30/2024	[Green bar]																																			

*Anticipated to take around one month total, allowing for needed fill and MSE walls to be constructed before winter in order for bridge construction to take place during the winter months.

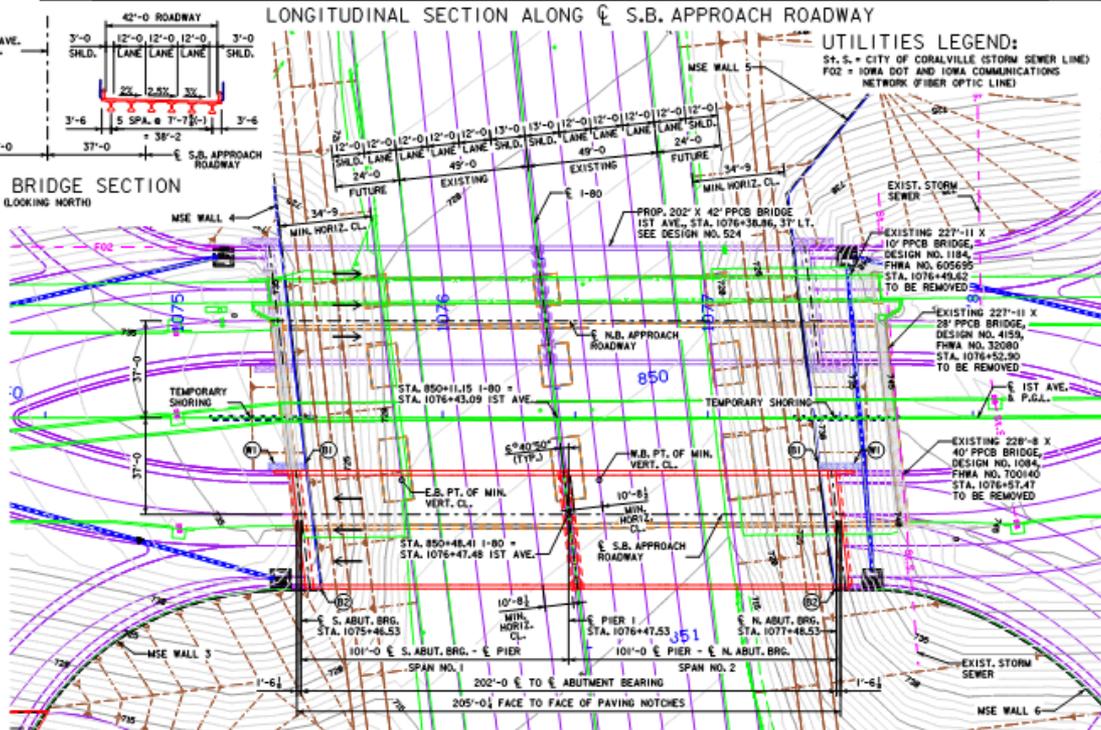
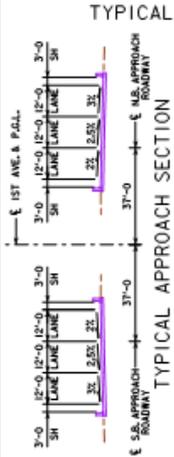
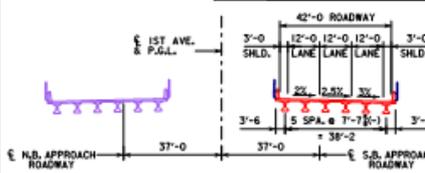
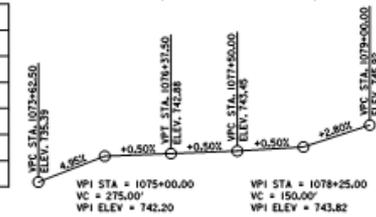
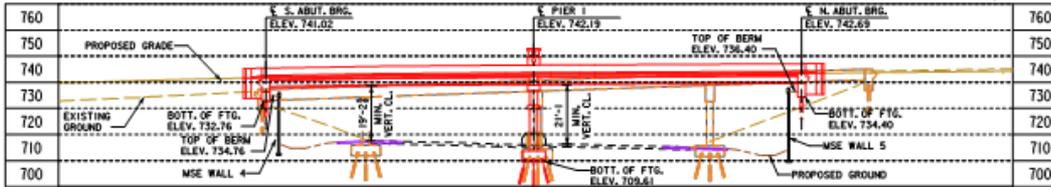
**Work remaining after Phase 4 Stage 2 will likely end early in 2025 and should have little to no impact on traffic in the interchange. It may include: landscaping, erosion control, and other related work.

Possible Constructability Challenges

- 1st Avenue Bridge Removal & Construction
- Magellan Pipeline Lightweight Fill
- Constrained Areas with Temporary Shoring
- I-80 Median Pier Construction
- South abutment construction for west traffic bridge

I-80 at 1st Ave DDI in Coralville

1st Avenue Bridge Removal & Construction



TRAFFIC ESTIMATE LOCATION

2015 AADT	19,000	V.P.D.	S.B. 1ST AVE OVER I-80
2040 AADT	26,000	V.P.D.	CITY OF CORALVILLE
2040 DRY	-	V.P.H.	T-17M/T-80M R-6W
TRUCKS	4 %		SECTION 5
			WEST LUCAS TOWNSHIP
			JOHNSON COUNTY
			FHWA NO. 32081
			BRIDGE MAINT. NO. 5243.10080
			LATITUDE: 41.65705°
			LONGITUDE: -91.564541°

MINIMUM VERTICAL CLEARANCE

E.B. ROADWAY
 OVERHEAD STATION = 1075+84.48, OFFSET 23.92' RT.
 OVERHEAD ELEVATION = 740.96
 DEPTH OF SUPERSTRUCTURE = 3.88'
 UNDERPASS STATION = 850+28.00, OFFSET 61.00' RT.
 UNDERPASS ELEVATION = 717.86
 MINIMUM VERTICAL CLEARANCE = 19.22'

W.B. ROADWAY
 OVERHEAD STATION = 1076+59.01, OFFSET 25.92' RT.
 OVERHEAD ELEVATION = 740.96
 DEPTH OF SUPERSTRUCTURE = 3.88'
 UNDERPASS STATION = 850+36.73, OFFSET 13.00' LT.
 UNDERPASS ELEVATION = 716.60
 MINIMUM VERTICAL CLEARANCE = 21.08'

- NOTES**
1. MINIMUM VERTICAL CLEARANCE CALCULATED USING EXISTING GROUND SHOTS.
 2. TL-5 (44") BRIDGE RAILING PROPOSED.
 3. STANDARD INTEGRAL ABUTMENTS.
 4. PIER DESIGNED FOR VEHICULAR COLLISION FORCE.
 5. PIER TYPE - WALL.
 6. BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
 7. SEAM TYPE STB.
 8. VERTICAL CLEARANCE CALCULATED USING 8" DECK THICKNESS.
 9. THE TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.14' BELOW THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE.
 10. VERIFY DURING FINAL DESIGN THAT 54" ROADWAY BARRIERS IN THE I-80 MEDIAN AT PIER 1 HAVE BEEN INCLUDED IN THE ROADWAY PLANS.
 11. FINAL PLANS WILL ADDRESS ATTACHING FIBER OPTICS UTILITY TO STRUCTURE.
 12. FINAL PLANS WILL ADDRESS ASBESTOS CONTAINED IN THE RAILING CAULK OF EXISTING BRIDGE, DESIGN NO. 1084.

BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
BI	1075+48.22	17.42' RT.	734.76	1077+42.07	17.42' RT.	736.40
B2	1075+53.99	65.56' RT.	734.76	1077+47.94	65.56' RT.	736.40
WI	1075+36.26	17.42' RT.	741.70	1077+55.28	17.42' RT.	743.61

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

PRELIMINARY

DESIGN FOR 6°40'50" SKEW (R.L.)
 217'-0" x 42'-0" PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE
 101'-0" END SPANS (BTS BEAMS)

SITUATION PLAN
 STATION 1076+47.53 (S.B. 1ST AVE OVER I-80) SEPTEMBER 2020
 JOHNSON COUNTY

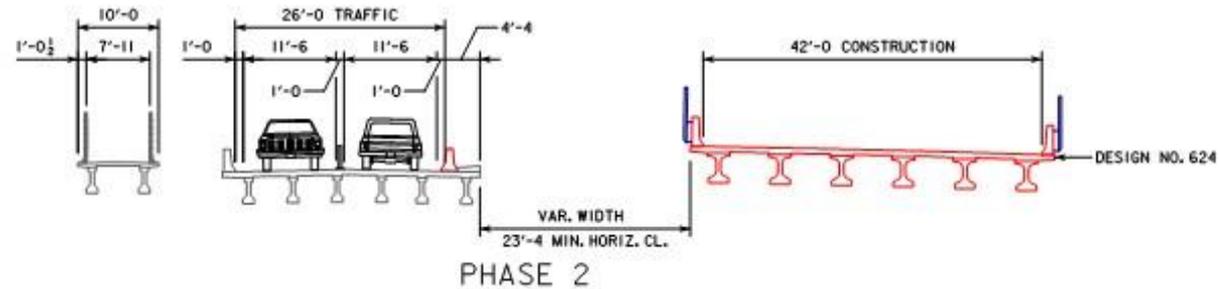
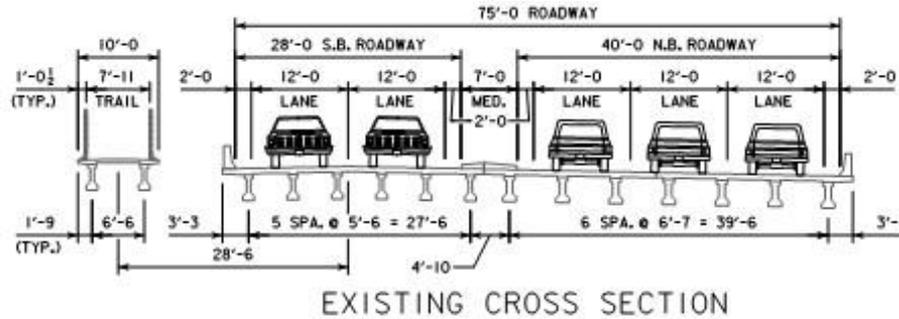
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 3 FILE NO. 30856 DESIGN NO. 624

PRELIMINARY
SUBJECT TO
CHANGE

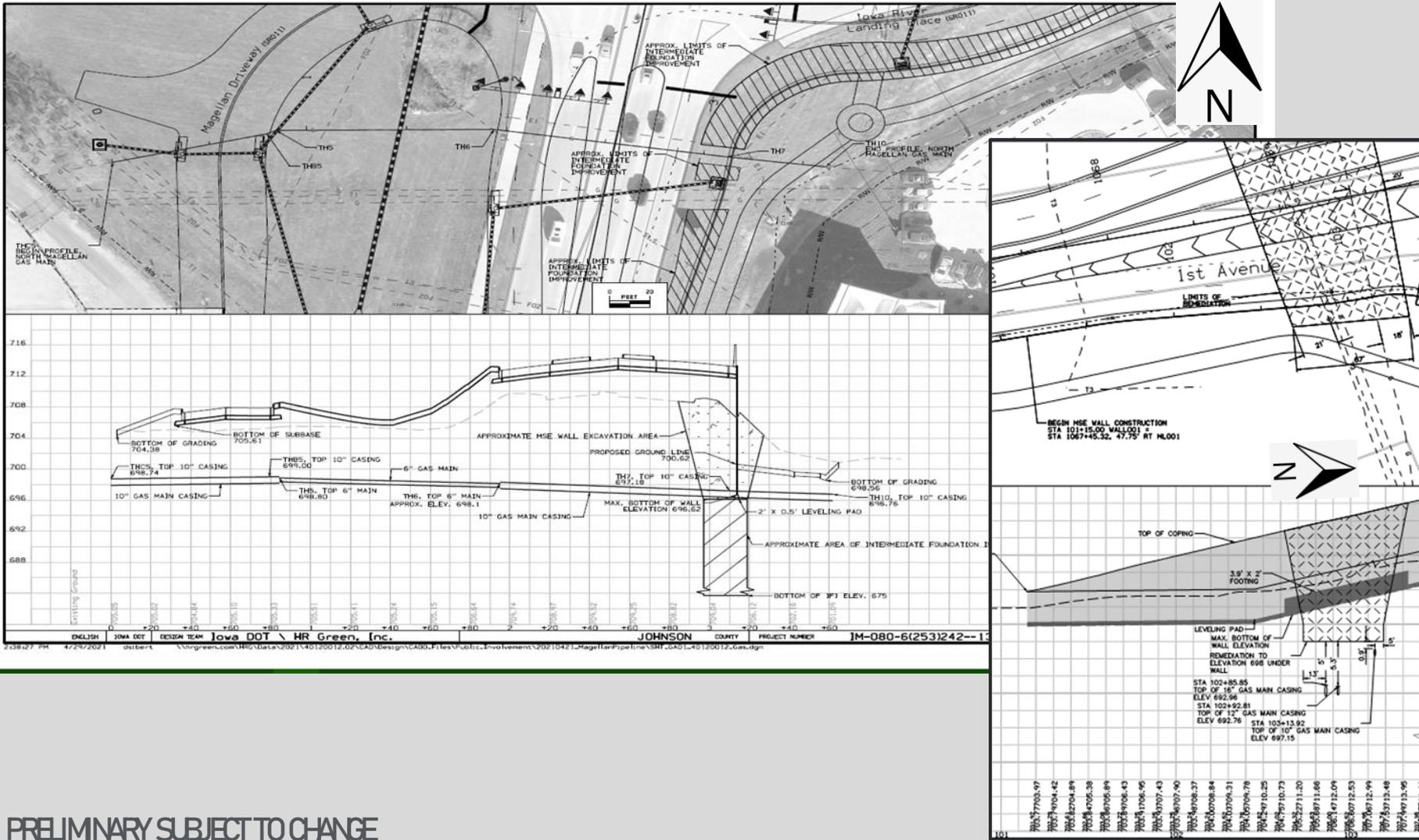
I-80 at 1st Ave DDI in Coralville

1st Avenue Bridge Removal & Construction

All Sections Looking North

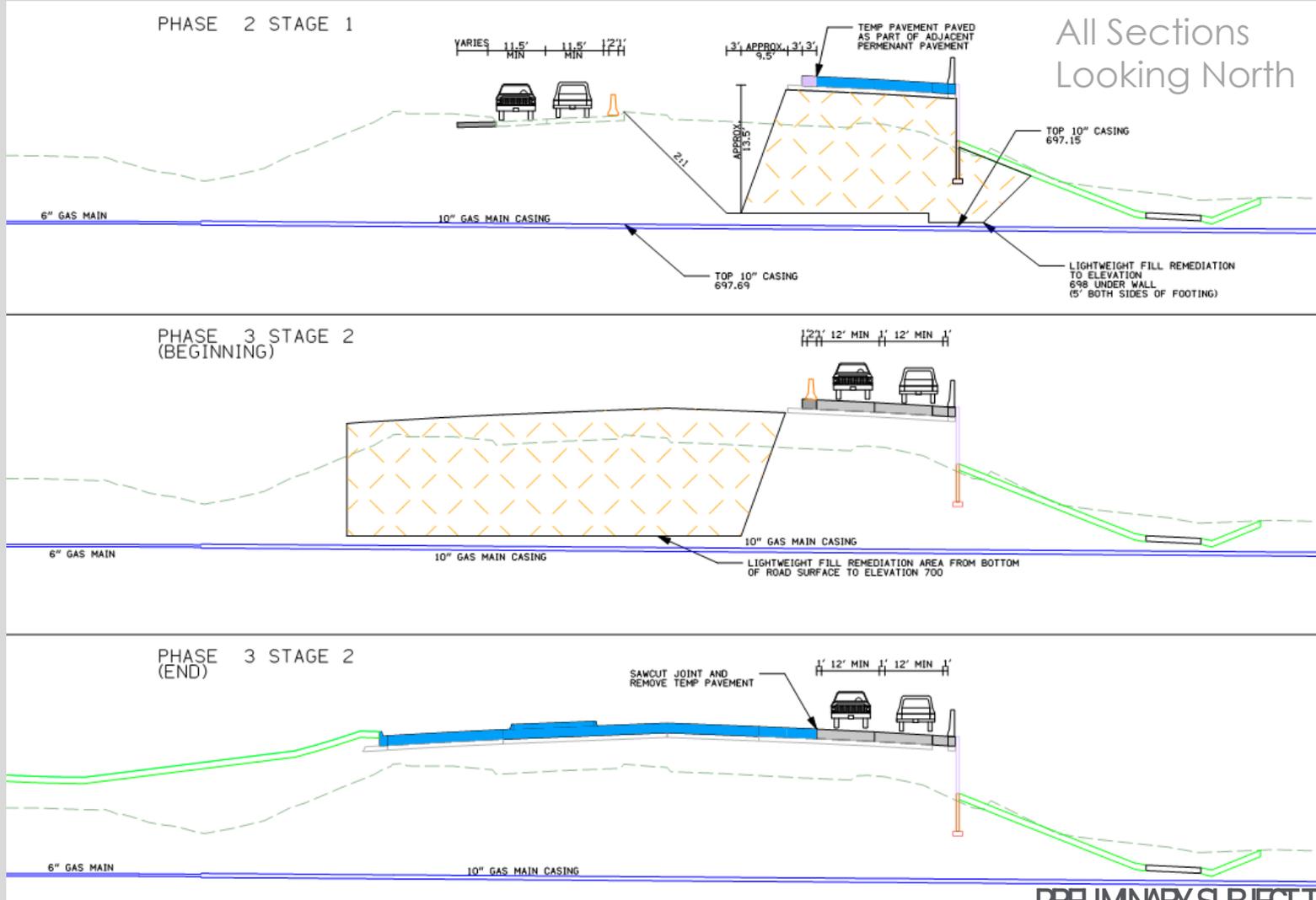


Magellan Pipeline Fill – Plan & Profile



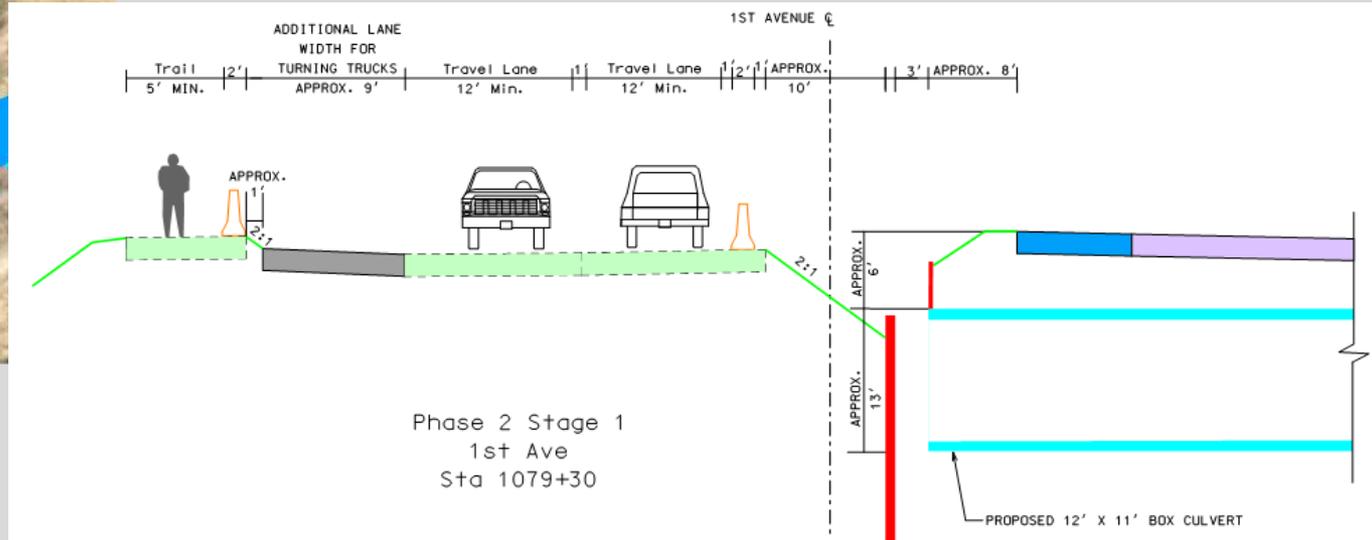
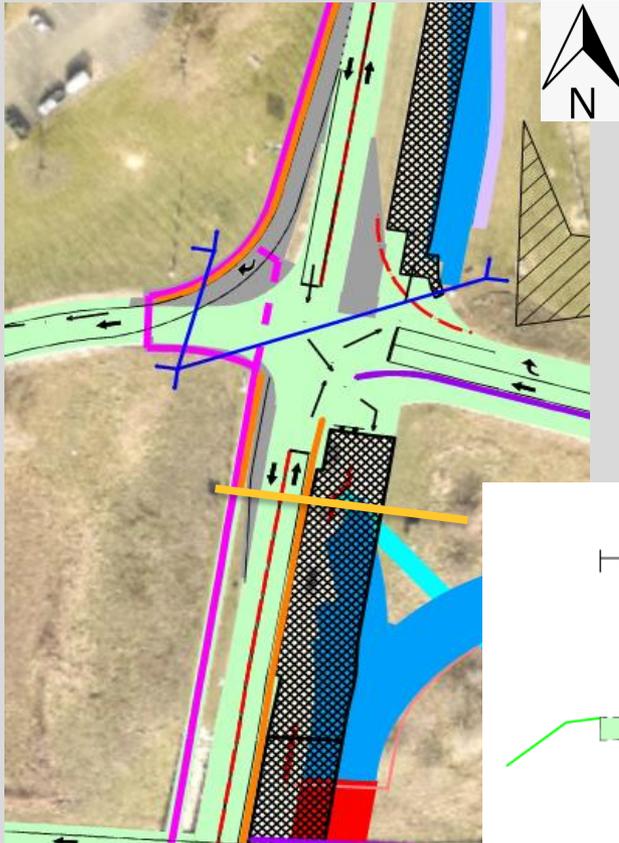
PRELIMINARY SUBJECT TO CHANGE

Magellan Pipeline Fill – Staged Cross Sections

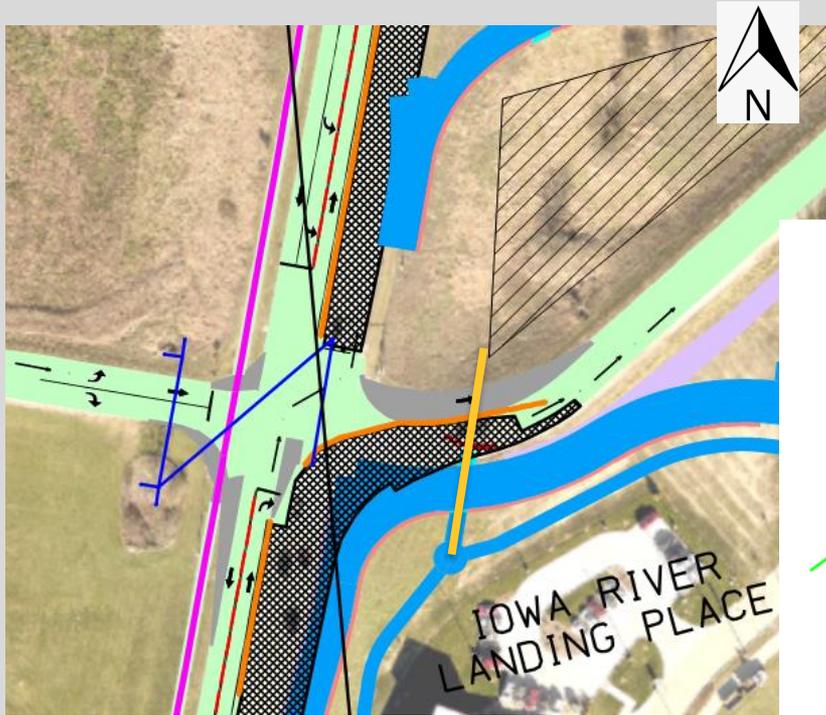


Constrained Areas with Temporary Shoring

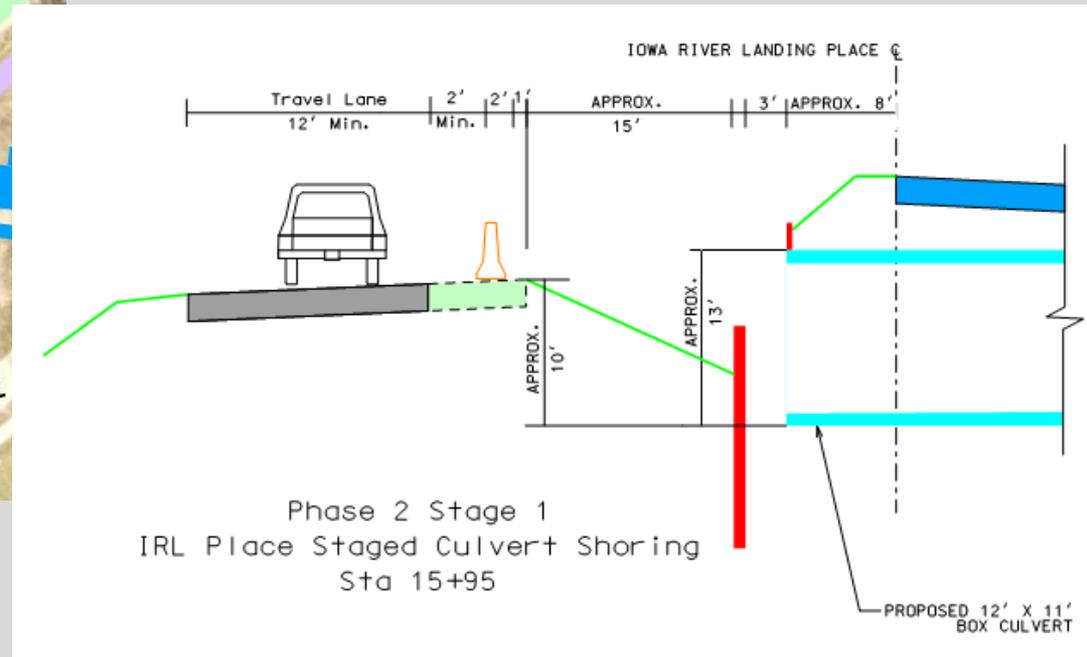
Phase 2 Stage 1 1st Avenue, north of I-80



Constrained Areas with Temporary Shoring

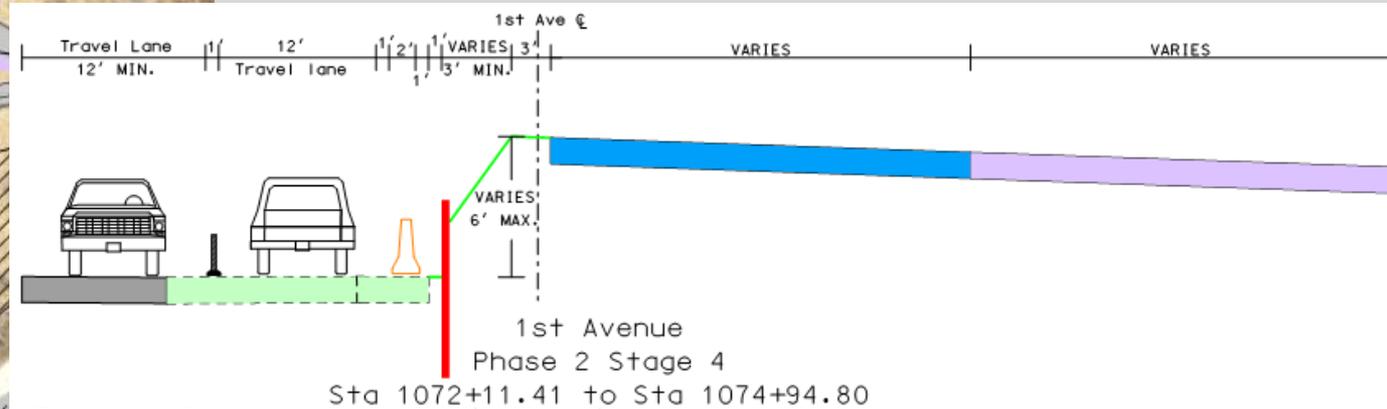
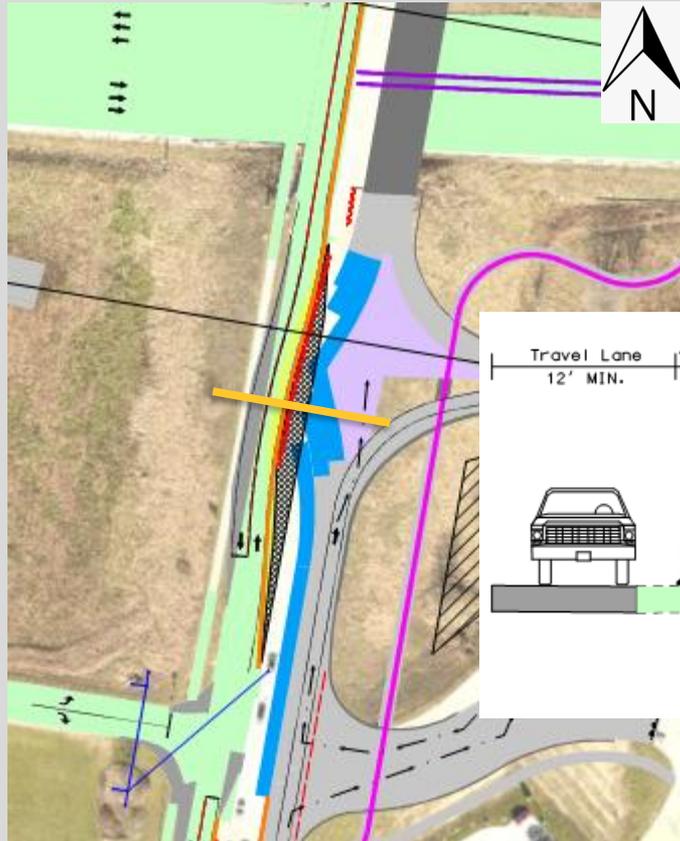


Phase 2 Stage 1 Iowa River Landing Place

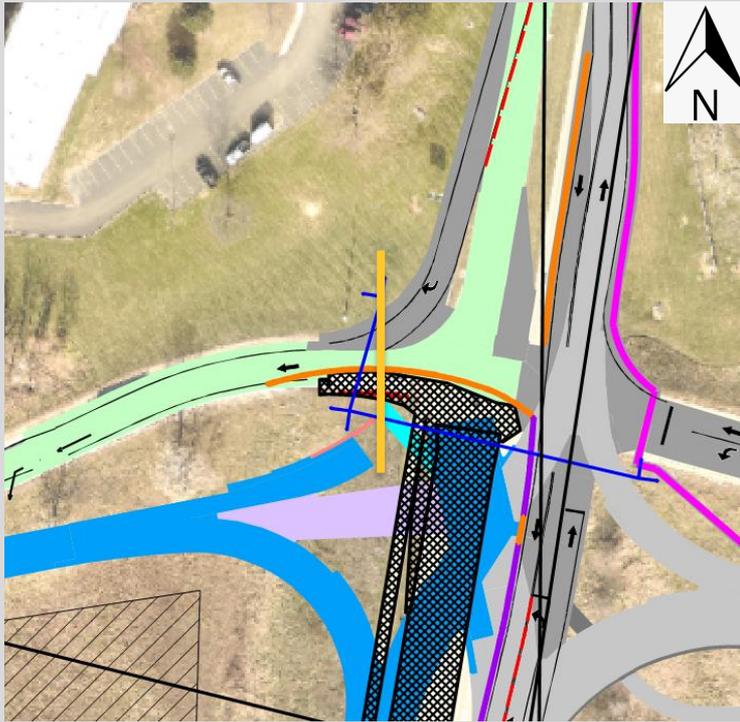


Constrained Areas with Temporary Shoring

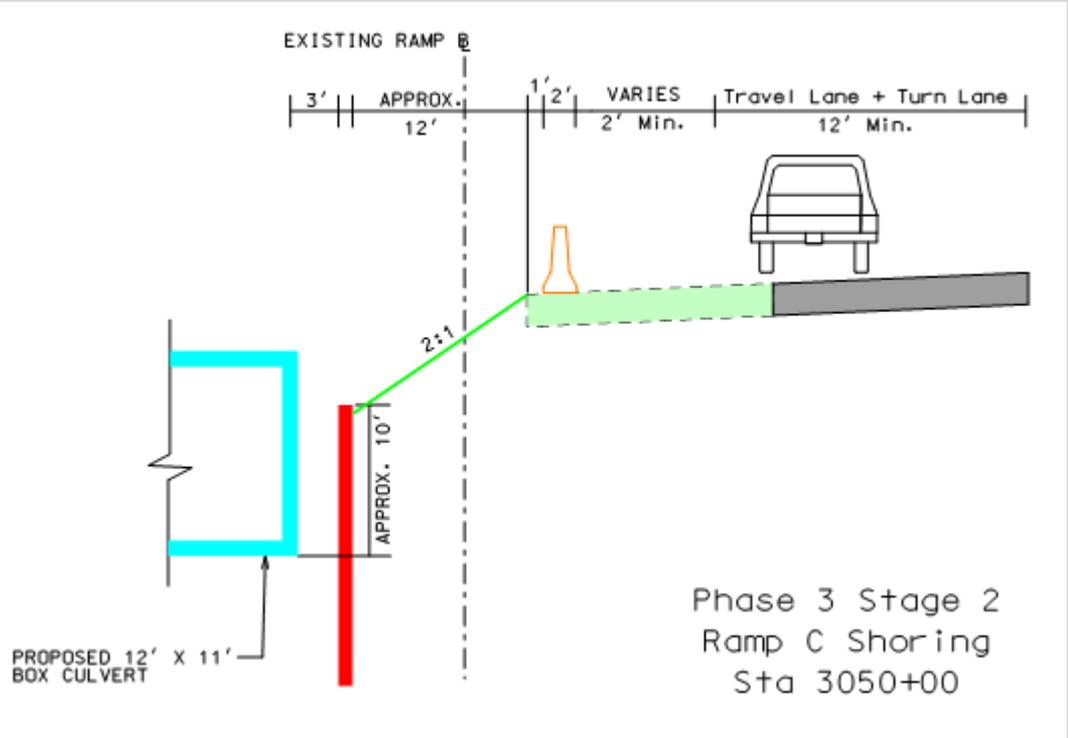
Phase 2 Stage 4 1st Avenue, south of I-80



Constrained Areas with Temporary Shoring

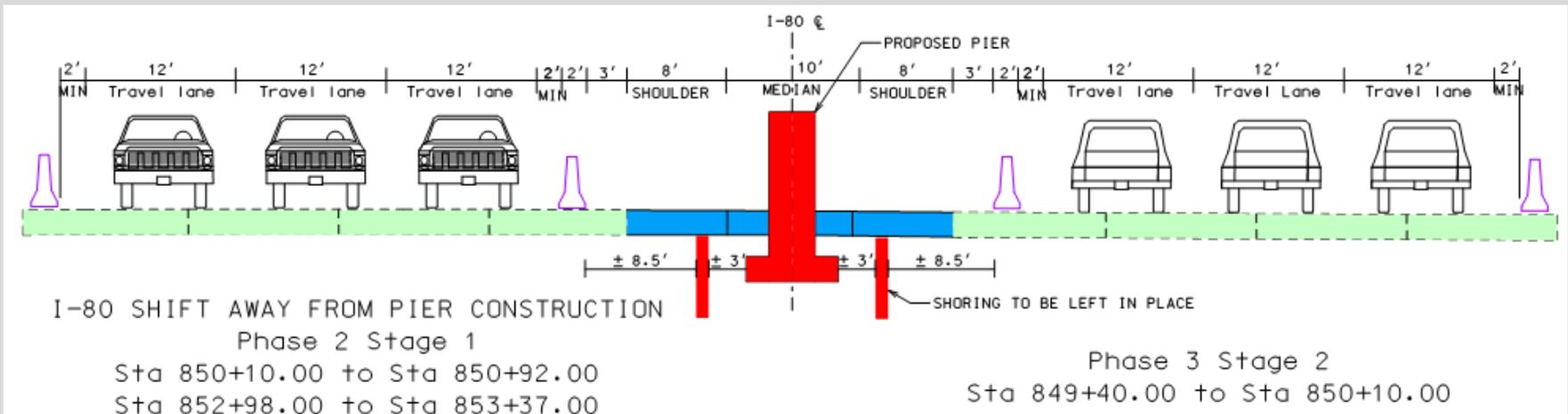
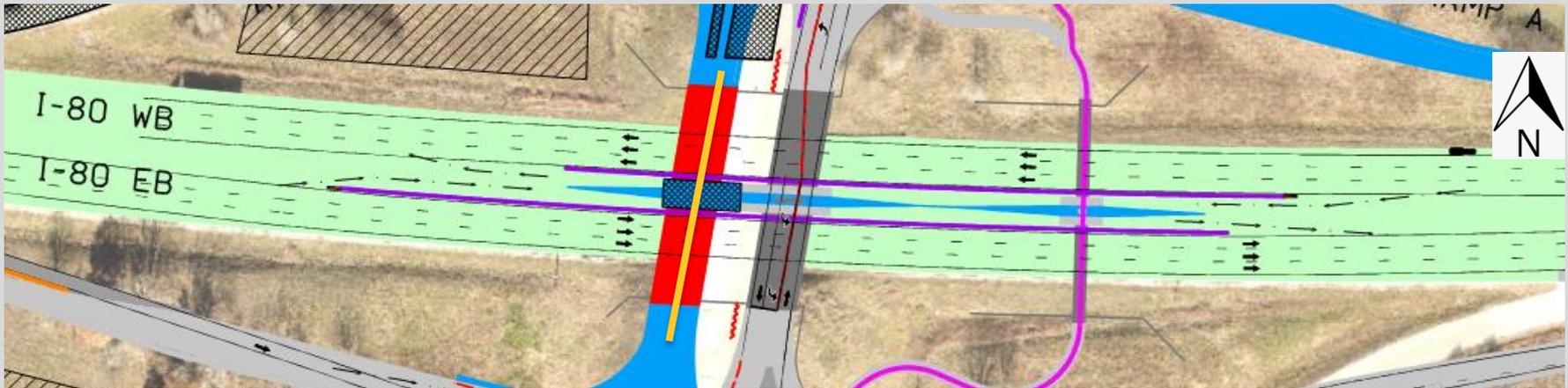


Phase 3 Stage 3 Existing Ramp C



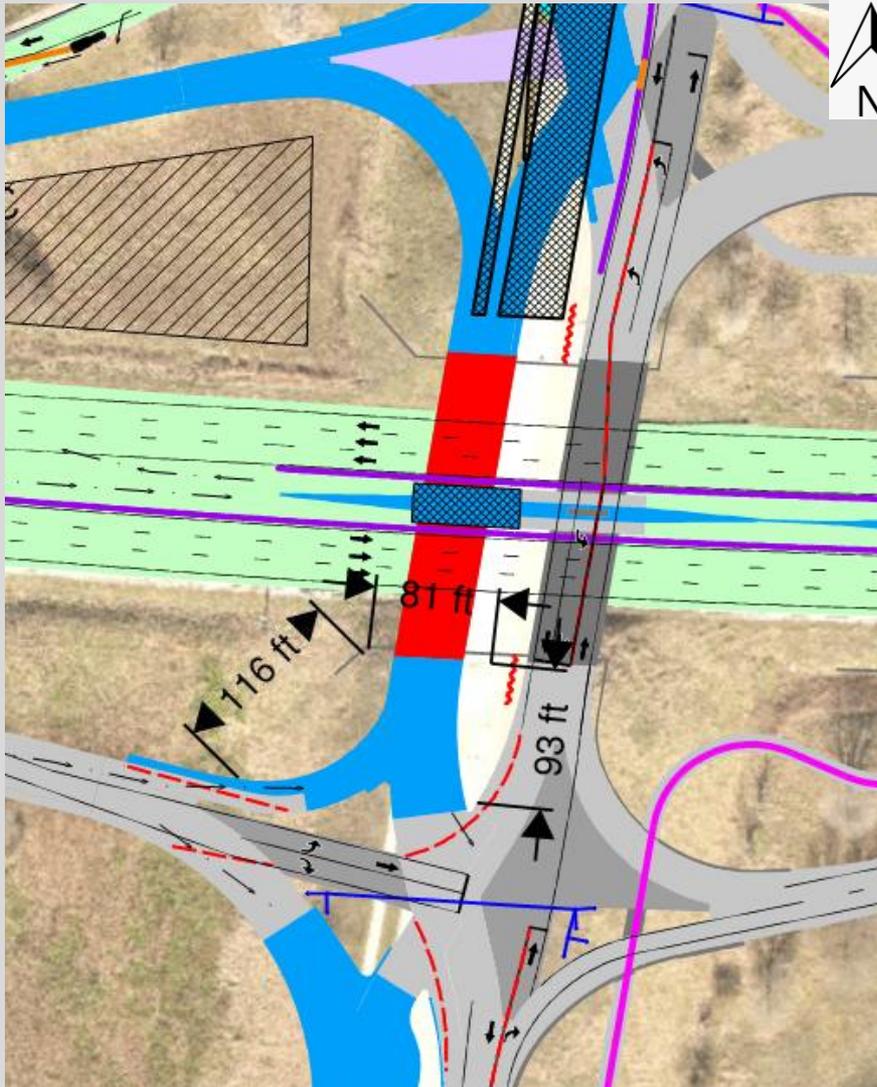
I-80 Median Pier Construction

Phase 2 Stage 1 and Phase 3 Stage 2 (shown)



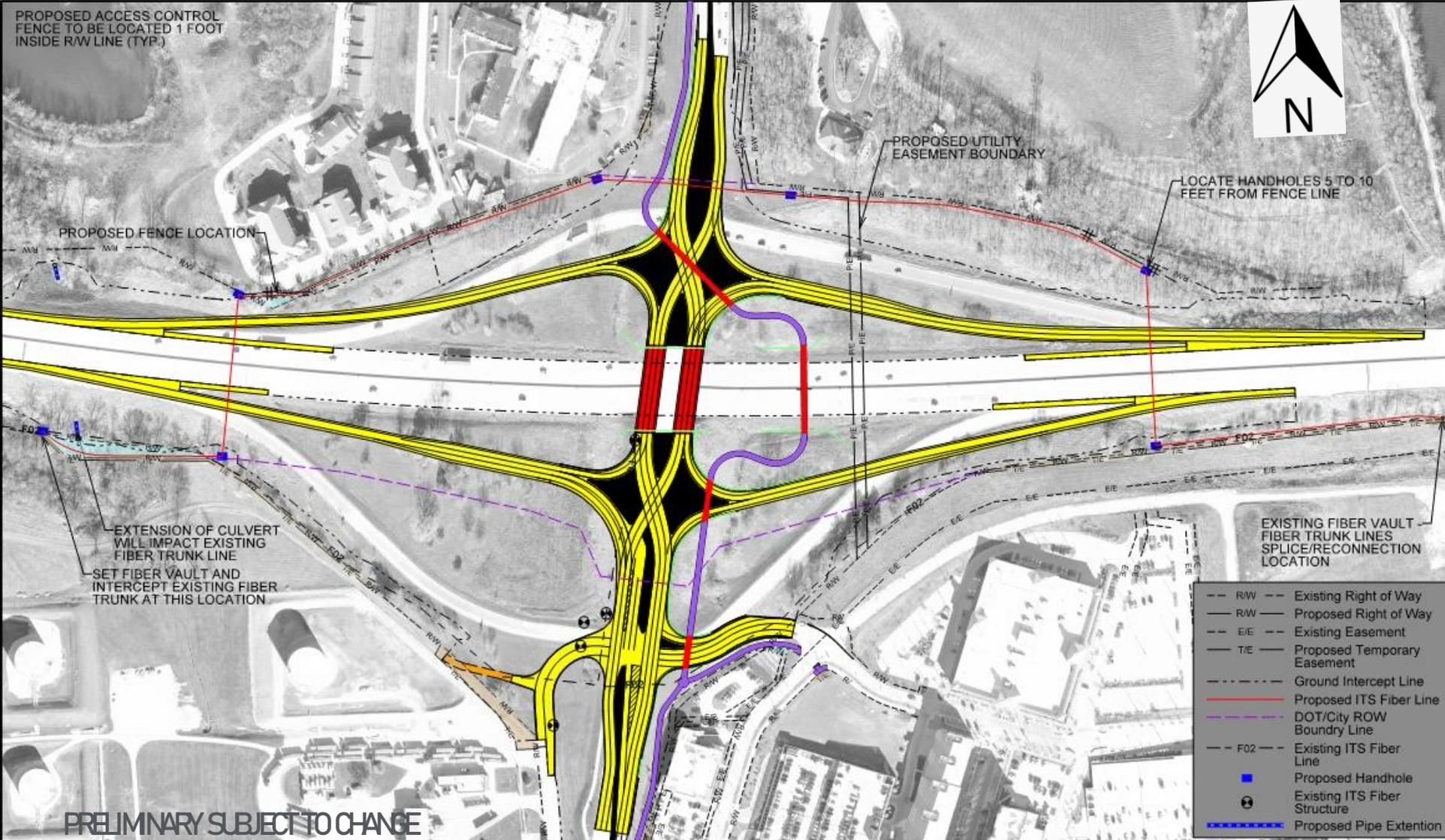
I-80 at 1st Ave DDI in Coralville

Southwest Abutment Construction



Phase 3 Stage 2
Bridge Staging
Area Constraints

DOT-ICN Fiber – Placed prior to interchange construction





THANK YOU FOR YOUR TIME AND ATTENTION

